EPA United States Environmental Protection Agency
Office of Water

Office of Ground Water and Drinking Water

MTBE in Drinking Water

What is MTBE?

MTBE (methyl-t-butyl ether) is a member of a group of chemicals commonly known as fuel oxygenates. Oxygenates are added to fuel to increase its oxygen content. MTBE is used in gasoline throughout the United States to reduce carbon monoxide and ozone levels caused by auto emissions. MTBE replaces the use of lead as an octane enhancer since 1979.

What is the Office of Water doing to address MTBE concerns?

Due to its widespread use, reports of MTBE detections in the nation's ground and surface water supplies are increasing. The Office of Water is actively involved in identifying the issues and addressing the concerns over the potential presence of MTBE in our water supplies. The Office of Water is participating in MTBE projects in the following areas:

Blue Ribbon Panel

EPA has established a panel of leading experts in the fields of public health, the scientific community, automotive fuels, water utilities, and local and State environmental officials to focus on the issues posed by the continued use of MTBE and other oxygenates in gasoline. The panel will look at the role of oxygenates in meeting clean air standards; evaluate its efficiency and other alternatives; assess the behavior of oxygenates in the environment; review known health effects; look at the cost of production and use and the product's availability; study causes of ground and drinking water contamination from motor vehicle fuels; and examine cleanup technologies for water and soil. In September 1999, the panel released its final report on the findings and recommendations on how best to ensure public health and environmental protection while maintaining clean air and water benefits.

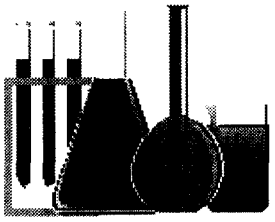
MTBE and the Safe Drinking Water Act

As part of implementing the Safe Drinking Water Act Amendments of 1996, the Office of Water has placed MTBE on the drinking water Contaminant Candidate List (CCL) for further evaluation to determine whether or not regulation with a National Primary Drinking Water Regulation (NPDWR) is necessary. The CCL divided the contaminants among those which are priorities for additional research, those which need additional occurrence data, and those which are priorities for consideration for rulemaking. The

Agency determined that MTBE needs more health effects research and occurrence data before a regulatory determination can be made. Information gathered from the Agency's research and data collection efforts will assist our regulatory determination.

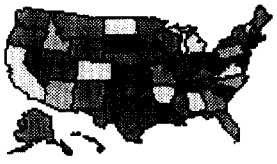
- In addition, MTBE has been included in the final Unregulated Contaminant Monitoring Regulation that will require all large public water systems and a statistical sampling of small and medium public water systems to monitor and report the presence of MTBE in their water supplies."

- As an additional interim measure, EPA responded to requests for guidance by reviewing and updating an advisory for MTBE in December 1997. This Drinking Water Advisory: Consumer Acceptability and Health Effects Analysis provides guidance to communities that may become exposed to drinking water contaminated with MTBE. The advisory recommends control levels that prevent adverse taste and odor (i.e. 20 to 40 parts per billion). Managing water supplies to avoid the unpleasant taste and odor effects at levels in this range also provides protection against any potential adverse health effects with a very large margin of safety. A fact sheet (PDF format) provides an overview of the advisory.



Research

To facilitate the advancement of crucial scientific knowledge needed for MTBE and other fuel oxygenates in the environment, the Office of Water has participated in an agency-wide task force on an "Oxygenates in Water: Critical Information and Research Needs" (Needs) document. The Needs document identifies key issues and information needed to support risk assessment and risk management of MTBE and other oxygenates in water, and lists more than 40 projects that are currently underway or anticipated. EPA is conducting a key pharmacokinetic study that will help clarify the potential health risks from MTBE in drinking water more quickly than the amount of time (likely more than four years) it would require to conduct and analyze a two-year drinking water study in rodents.



Occurrence

The Agency is very concerned and has been closely following the increasing detections of MTBE in the ground and surface water supplies throughout the nation. While most MTBE detections typically occur at levels below those recommended in EPA's Drinking Water Advisory, there have been instances of contamination at much higher levels of potential health concern. We are working together with the U.S. Geological Survey to assess the frequency and levels of MTBE occurrence in geographic regions using MTBE as part of the Reformulated Gasoline (RFG) program. This study, as well as an upcoming national occurrence survey sponsored by American Water Works Association Research Foundation and increased monitoring studies by many states, will help clarify the extent to which MTBE may threaten the nation's water supplies.

Additional EPA Links on MTBE:

Office of Mobile Sources

Office of Underground Storage Tanks

Other MTBE-related Links:

California Department of Health Services EXIT EPA

MTBE Research at University of California at Davis EXIT EPA

Association of California Water Agencies EXIT EPA

American Petroleum Institute -- MTBE Resource Page EXIT EPA

Maine MTBE Webpage EXIT EPA

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http://www.epa.gov/ogwdw/mtbe.html